**Claims**

What is claimed is:

1 A method for fabrication of polycrystalline silicon thin film transistors comprising the steps of:

a) a substrate;

b) a buffer oxide formed on said substrate;

c) depositing a amorphous silicon film on said buffer oxide;

d)depositing a low-temperature oxide on said amorphous silicon film, wherein said low temperature oxide is employed to form a stop layer of silicon film dry etching after step d) process, a thermal insulating layer of laser annealing or a hard mask of the removal of polysilicon spacer after recrystallization;

e) forming amorphous silicon film by photoresist of hard mask on the low temperature polycrystalline silicon thin film transistor (LTPS-TFT) as a active layer, and then using a solution of silicon dioxide of wet isotropic etching to slightly go toward inner etching of said buffer oxide before or after the removal of said hard mask;

f) depositing another amorphous silicon film by connecting said active layer, and then forming said polysilicon spacer by dry etching behind either side of said active layer of the low temperature polycrystalline silicon thin film transistor (LTPS-TFT) , and then forming large silicon grain structures of said active layer by recrystallization of high-energy

continuous wavelength laser or recrystallization of excimer laser annealing on dog-bone shap active layer.

2 A method of claim 1, wherein said polysilicon spacer is selected from the group consisting of polycrystalline silicon film and amorphous silicon film.

3 A method of claim 1, wherein said polysilicon spacer of step f) form on either side of said active layer of selecting from the group consisting of thin film transistor (TFT) and silicon-on-insulator metal oxide semiconductor field effect transistor (SOI-MOSFET) in the low temperature or high temperature process.

4 A method of claim 1, further comprising under either side of said active layer.

5 A method of claim 1, wherein said polysilicon spacer of step f) by recrystallization of high-energy continuous wavelength laser or recrystallization of excimer laser annealing on dog-bone shape active layer is to generate temperature gradient.

6 A method of claim 1, where said polysilicon spacer replace dielectric material with oxide, nitride, and metal oxide, etc. and metal material with aluminum (Al), wolfram (W), molybdenum (Mo) and chromium (Cr), etc..

7 A method of claim 1, wherein said the step f) forming recrystallization active layer by sel cting from the group consisting of excimer laser

annealing (ELA), solid phase crystallization (SPC) or metal-induced lateral crystallization (MILC), and then forming said polysilicon spacer on either side of said active layer of the thin film transistor (TFT) or silicon-on-insulator metal oxide semiconductor field effect transistor (SOI-MOSFET).